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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/586,657

07/19/2006

Hirofumi Kubota

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EXAMINER

CLARK, GREGORY D

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/586,657	<b>Applicant(s)</b> KUBOTA, HIROFUMI	
	<b>Examiner</b> GREGORY CLARK	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/19/2006</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Specification***

The specification is objected to in paragraphs 9 and 15 because of the following informalities: the term "spattering" should be replaced with the term sputtering. Appropriate correction is required.

### ***Claim Objections***

Claim 15 is objected to because of the following informalities: the term "spattering" should be replaced with the term sputtering. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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The use of the terms "like" and "type" render the claims indefinite. It not clear how these terms affect the scope of the nouns they modify (see MPEP 2173.05b). For example: something either has a diamond structure or it does not.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

**Claims 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Komatsu (JP11-026155A).**

**Regarding** Komatsu discloses a protection film for an electroluminescent element where as the diamond-like carbon (DLC) protective film (abstract) and the film has a hydrogen content of 50 atm%, preferably, below 45 atm%, it adjusts so that it may become 40 atm% (paragraph 12). The applicant claims values of "not less than 30 at%"; therefore, the reference clearly teaches values with in the claimed range as there is both substantial overlap of the ranges 30-50 at %, and preferred values such as "45 at %" with in the claimed range

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki (2003/0184217).**

**Regarding Claims 7-12,** Yamazaki discloses a protective thin film formed on a substrate which has a hydrogen content of 5 to 30 atm% (paragraphs 10 and 116). The protective film can be SiN or SiON (paragraph 247), SiO (paragraph 133), and DLC (paragraph 116). Yamazaki also discloses a light emitting device with a light emitting element that emits fluorescent light or phosphorescent light upon application of electric field (EL device) to a pair of electrodes of the element which sandwich a layer containing an organic compound (organic luminescent layer between two electrodes) (paragraph 2). Yamazaki discloses further discloses that the protective film can be obtained by PCVD (plasma CVD) or sputter coating (paragraph 115).

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Yamazaki disclosed the claimed invention except for the specific range of “a hydrogen content of not less than 30 at%. However, examiner believes that, “not less than 30%” as claimed would overlap a value 5 to 30% as taught by Yamazaki as 30% would be an overlapping value.

It has been held that a range of “more than 5%” would overlap a disclosure of 1-5%, *In re Wertheim*, 541 F. d. 257, 191 USPQ (CCPA 1976), *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d. 1934 (Fed. Cir. 1990).

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made, since it has been held that choosing the overlapping portion, of the range taught in the prior art and the range claimed by the applicant, has been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 USPQ 549. In this instance it would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected a value of 30 at % H in the films disclosed by Yamazaki with a reasonable expectation of producing a film having providing suitable hardness, oxygen and moisture resistance.

The applicant discloses that the protective film offers a barrier against oxygen and moisture damage (specification paragraph 5). The protective films disclosed by Yamazaki also protect against oxygen and moisture (paragraphs 154 and 156). At the time of the invention a person of ordinary skill in the art with the teachings of Yamazaki could adjust the hydrogen concentration accordingly with the goal being to achieve suitable protection of the electroluminescent device against the potential damage caused by oxygen and moisture

**Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over  
Komatsu (JP11-026155A).**

As discussed above Komatsu teaches protective films having a H at % of less than 50 and the applicants claim values of "not less than 30". These ranges overlap in the region of 30-50. It is the examiner's position that it would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range with the reasonable expectation of producing a structure having good protective properties.

It is held that choosing the overlapping portion, of the range taught in the prior art and the range claimed by the applicant, has been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 USPQ 549.

Komatsu also discloses that when the hydrogen concentration becomes low the resulting film has more diamond character (hardness) and when the hydrogen concentration is high the resulting film has more graphite character resulting in a loss in hardness (paragraph 8). The examiner takes the position that it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the hydrogen concentration to a suitable level to optimize the film barrier protection.

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***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Tera (2003/0129298) and (Choi 6,692,326).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY CLARK whose telephone number is (571)270-7087. The examiner can normally be reached on M-Th 7:00 AM to 5 PM Alternating Fri 7:30 AM to 4 PM and Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/  
Supervisory Patent Examiner, Art Unit 1794

GDC